ACKNOWLEDGEMENTS

This research study shall not come to reality without the supports from my family and my colleagues.

To all my dearest friends, thank you for your support and leading in completing this Project Work. For the important role in guiding the success of this Project Work, I would like to thank my supervisor, Mr Patrice for his uncountable time and his guidance to complete this research work.

Lastly, to everyone who had spent time in contributing the questionnaires sessions, without you this research will never come to an end, thank you so much.

Table of Content

ABSTRACT

The famous riddle in the training and development fraternity is: What do some training and development professionals view as both an opportunity and a threat? The answer: e-learning.

While some trainers view it as preying upon their insecurities, others understand that e-learning is a tool to help learners gain a comprehensive knowledge of a specified field – an elusive task due to rapid product development and evolution.

However, far at large there are still doubts on a full-blown e-learning initiative company wide. Why and what should we do about it, is my next course of action.

The purpose of this study was to identify some determinants that initiate e-learning motivation modern industries. The study examines the independent variables which were the organizations demography, IT infrastructures, cost of implementation, learning culture and KSAO of the course content developers linking the relationship of moderating variables; influence and exploration from the government and e-learning fraternity and the identification of LMS, to the dependent variable – e-learning initiatives.

Data were collected from a sample of 103 organizations in the state of Penang Island, west peninsular Malaysia.

The findings in general provide support to the hypothesis formulated. The results showed that the relationship among KSAO of content developers, IT infrastructure, cost of implementation and the learning culture were fully supported by the analysis.

This study has essential implication for organizations. Managements have to first understand what initiate the motivation of implementing e-learning in the organizations for the global challenges in order to stay competitive in today's challenging learning, training and development environment.

Chapter 1

INTRODUCTION

1.1 Background Information

E-Learning is taking root in organizations of all sizes – and, so far, the people responsible for its implementation are pleased with the results. This research of mine is a mutual desire to learn more about how organizations in semiconductor industry within the Silicon Valley of Malaysia are using e-learning, the technology they're using to deliver it and whether it's helping them accomplish their goals.

I am trying to gauge the satisfaction of the companies going into e-learning initiatives, the versatility of e-learning, the overall use of e-learning in the organization, the suitability of e-learning for all subject matters, the convenience as opposed to traditional class and ever importantly the effectiveness of e-learning.

We have come to realize that the longer organizations have been using e-learning, the more likely they are to measure results beyond course completion. Most companies are trying to tie training back to business goals and I feel it is good for organizations that want to expand their e-learning initiatives. That kind of movement will add legitimacy to training in general and lead to continued expenditures on training. It will also improve the processes.

This research will also shed some light into the advantages of developing a corporate e-learning typically focusing on semiconductor industries. An interesting area of this research is to determine the fears of an organization who about to jive into the implementation of e learning from its traditional training facilities. At the end of this research, we would be able to find out the opportunities and challenges facing the industry both technologically and philosophically. In summary, we are here to find out whether e-learning is ready to take over.

1.2 Research Problem

The common complaint related to e-learning activities is that the trainees have little motivation to learn in the passive way. The quality of e-learning programs or the materials will not ensure training effectiveness if there is lack of motivation to learn. Therefore, besides looking at the training programs, organizations have to first understand what motivates their employees so that the training objectives in the organizations are achieved. Thus, this research attempts to turn the spotlight of researches transpired in Western countries pertaining to e-learning motivation to Malaysian modern organizations. The main research question for this study is to investigate the conjointment of the organizations profile, budget constraint, organizations learning culture, IT infrastructure involvement, the content developers and trainings' target group.. As such, fundamentally the intent of this study was to attempt to examine the following questions.

1. Is there any significant relationship between an organization's portfolio and the e-learning implementation initiative?
2. Is there any significant relationship between the course owner characters and the success of e-learning implementation?
3. Is there any significant relationship between an organization's IT infrastructure and the success in implementing e-learning?
4. Is the organization's learning culture meeting the desire training objectives with the e-learning implementation?
5. Is there any significant relationship between the IT infrastructures in the organization with the e-learning implementation?
6. Is the target group influence the success of e-learning implementation?

1.3 Objectives of the Study

Objectives of this study are designed to test general hypothesis to identify some of the determinants that motivate e-learning. 21st century and beyond promises great information system infrastructure which almost guarantees light speed digitized information transformation. To stay competitive, people, the greatest asset of any organization, need up to the minute skill that enable them to get the most out of this armor. However the realities of high workloads and limited resources can make it prohibitive for this human capital to gain the critical training they require. Hence the presence of a variety of world-class products and services under the auspices of e-learning is a blessing from the heavens. E-learning provides not only on-line courses but also offers learning management

tools that allow better management, tracking and evaluation of the success of the training investment. According to Kevin Kruse (2002), the general benefits of e-learning training when compared to traditional *instructor-led training* include all those shared by other types of technology-based training. These benefits are that the training is usually self-paced, highly interactive, results in increased retention rates, and has reduced costs associated with student travel to an instructor-led workshop.

Some of the debated benefits put forth are:

- Better management of time and costs of our training
- Leverage materials from an external source.
- Optimize training results
- Give people the ability to dig deeper, know more, and stay on top of today's rapidly evolving technologies.

Despite of the invigoration by government in many countries, still many are not taking the serious step to initiate but rather conserve the wait and see attitude to kick start e-learning in their organization. We are here to analyze the "withholding factors"?

1.4 Organization of Chapters

This study is organized into five chapters. Chapter 1 introduces the subject matter, explains the research problems, and states the objectives of this study. It is aimed at identifying some determinants of e-learning initiative among Malaysian modern organizations in Penang Island. The remaining chapters have

been organized in the following manner. Chapter 2 surveys previous studies and their findings on e-learning initiative. The theoretical framework and formulation of hypothesis for investigation are included at the end of this chapter. Chapter 3 outlines the research methodology, which covers the discussion on the research sites, comprises sampling design, administration of questionnaires and the statistical analyses deployed. Chapter 4 presents various analyses of date collected and the respective findings. Lastly, Chapter 5 concludes the study, discusses survey findings, highlights some limitations, provides implications for management and gives suggestions for future studies in this field.

Chapter 2

LITERATURE REVIEW

2.1 Introduction

This chapter reviews at the relevant literature that forms the basis of this study. To understand the related knowledge on the subject of this study, the literature survey encompasses previous research study on the emerged of e-learning and its initiatives, organizational background, content developers' character and attitude, implementation and sustaining budget constraint, Learning Management System (LMS) integration, learning culture, information technology infrastructure relationship with the subject studied and the influence and invigoration by the local government in the modern industries. These are presented in section 2.2, to section 2.11 in this chapter. The review will serve to compare and contrast the findings of past researches and the views of experts in this field. Section 2.13 presents a theoretical framework of the study, followed by the formulation of hypothesis in section 2.14. Lastly, section 2.5 provides a summary if the chapter discussion and an overview of the subsequent chapter.

2.2 The Emerge of the E-Learning

E-Learning is defined as a broad definition of the field of using technology to deliver learning and training programs. Typically used to describe media such as CD-ROM, Internet, Intranet, wireless and mobile learning. Some include

Knowledge Management as a form of e-learning. Took awhile for the right term to come about, since 1995 it was all called "Internet based Training", then "Web-based Training" (to clarify that delivery could be on the Inter- or Intra-net), then "Online Learning" and finally e-learning, adopting the in vogue use of "e-" during the dot com boom. The "e-" breakthrough enabled the industry to realize hundreds of millions from venture capitalists who would invest in any industry that started with this magic letter. (E-Learning Guru, Kevin Kruse www.e-learningguru.com, 2003)

The online e-learning has become a very popular subject in education as well as private organization learning tools. As quoted by *Peter F. Drucker*, (**Forbes Global, May 15 2000**), The Interactivity of online education, its facility of blending graphics and pictures with spoken word, give it an advantage over the typical classroom. With the interactivity of the Internet, we get the equivalent of one to one teacher – student ratio in short; the means are finally at hand to improve productivity in education.

In an article by *MariAN Klein* (**December 2002**), she mentioned that "e" mode of conveying learning materials had been progressively come into play during the last ten years. According to her, there has been a perceptible rise, indeed some would say an explosion, in the creation and implementation of e-learning programs, software, and courses in corporations and universities across the globe. While there are many reasons why organizations consider using technology to deliver and/or support training, one of the key reasons e-learning continues to gain momentum and popularity is the hope that using technology will

reduce overall training costs. In her article, she quoted that organizations who practice e-learning could save more than 50% of overall training cost. E-learning for purposes of her article will be defined as browser, CD-ROM, and/or PC-enabled learning events or environments. Although it constitutes less than 10% of an average training organization's budget, it is still considered to be a viable candidate as an effective method of training implementation, whether used to deliver an online learning experience or as support of an existing classroom-based program. In fact, the use of e-learning is predicted to continue to rise within integrated blended learning approaches across all sectors of the "learning industries" in the next two to three years. Moreover, there is considerable evidence that widespread adoption of e-learning is continuing to rise at a steady pace. As hope continues to ignite interest in the implementation of e-learning programs and courses, the crevasse between effective and ineffective e-learning initiatives widens.

2.3 E-Learning Initiatives

For many who are beginning to consider creating or developing e-learning, the crevasse tends to blend into the vast training horizon, making it difficult to see and discern until suddenly, they find themselves caught in a free fall of missed expectations and reams of incomplete storyboards. Pitfalls abound for those who have not considered many key elements and components necessary to create, develop and implement an effective e-learning initiative.

E-learning delivered to learners via an intranet or the Internet at their workstations, has received much positive publicity lately, what has been the holding factors is too little attention has been given to its drawbacks and limitations. When implemented correctly and used appropriately, e-learning is a very powerful emerging training strategy. Unfortunately, some organizations have denied themselves the benefits of this exciting new tool by jumping on the bandwagon with little forethought or for the wrong reasons. It's important to understand what e-learning can and cannot do.

What initiate organization to implement e-learning is that they believe it works! Provided it is used appropriately, e-learning can be very effective and powerful. Some information is best delivered in small chunks when the learner is ready to learn, just before the learner has to apply it and in the format in which the learner needs it. Within this context, e-learning is most effective when a learner needs to be given a nugget of information, such as a particular change in product or pricing, or as a refresher or augmentation of something that was learned before. Provided those conditions are met, e-learning hits the mark.

Perhaps the greatest power of e-learning comes from a well-designed blend of knowledge management, performance support, and customer relationship management (CRM). Knowledge management imparts the collective experience of an organization, which serves as helpful background when the appropriate piece of information is filtered and delivered to an employee to handle a specific business situation. Performance support provides just-in-time

access to a database for information on such items as products, services, policies, procedures, and their specifications.

E-learning can supplement knowledge management and performance support by reminding the employee how to use that information. This method can also support CRM, a database that employees can access for detailed customer information, for example, by training the employee on a new feature of the system. In these instances, e-learning is used as a reminder, update, or extension of something that has been learned before, relating to products, services, procedures or policies.

2.4 E-Learning's Drawbacks

The usual style of online e-learning courses in general, has a common length, which is short but precise. A more intensive and complicated course usually break into many sequence, instead of having the trainees seat through the entire course. Cases like this eventually create the down side. When it doesn't work in particular, e-learning in general is inappropriate and even detrimental to the learner under the following conditions:

When learning complex skills. A complex set of skills, such as service, sales, coaching, and management skills, is impossible to learn in a 15-minute session or even in a series of 15-minute sessions. That is because complex skills are best learned by doing, practicing, experimenting, failing, and receiving feedback. Probably the best e-learning method for accomplishing these activities is not 15-minute e-learning but simulation-based e-learning. This condition is supported by

John Cleave, Ph.D., principal of Experience Builders in Chicago. According to him, E-learning is appropriate for providing sound bites, not developing skills. He says people do not learn by passively absorbing information, and 15 minutes is not enough time for substantive activity like reflection or practice. This is also agreed by *Jane Johnson*, Ph.D., president and CEO of By Design, Inc. She says, training content is inappropriate for 15-minute e-learning when there are too many steps, when the steps require reflection, or when complex skills and talents need to be developed.

When there are frequent interruptions. When the ringing of phones surrounds the employee and deadlines loom, focusing on learning is impossible. "Training in four 15-minute increments in many cases is less effective than one full hour of instruction," says Cleave. "When you throw 15-minute vignettes at people while they're in the midst of doing their jobs, they simply don't have time to pull off their job caps and put on their learning caps."

When 15 minutes is too long or too short. According to Brad Johnson, executive vice president of Intrepid Learning Solutions, different people have different learning styles. A 15-minute e-learning module might be too long for a salesperson with a short attention span, but too short for a detail-oriented engineer.

There are cases where five or 10 minutes are more effective than 15. Design Inc.'s Johnson explains, "You can whet learners' appetite, for example, by sending a Web bite or e-mail presenting a decision-making challenge, asking them to consider possible solutions and alerting them that they will learn all about

it in the next live training session. The five- to 10-minute e-learning then functions like a teaser. As a follow-up to training, sometimes 30-second messages are sufficient to keep the learner focused."

When e-learning isn't the most effective method. Some learning objectives, such as developing a more effective problem-solving procedure, are best accomplished in live collaboration with other employees, sharing successes and frustrations.

When e-learning lacks sound instructional design. "All learning modules, irrespective of length, need to incorporate the basics of good instructional design," says Intrepid Learning Solutions' Johnson. "E-learning that is not functionally sound will not work. Further, a 15-minute e-learning module on its own most likely will not achieve learning or business objectives unless it is packaged as part of a greater curriculum. Four 15-minute e-learning modules, followed up by a two-hour instructor-led module, on the other hand, might be an effective learning experience."

When there are technology challenges. Waiting five minutes while the WAN or LAN delivers the information is both counterproductive and frustrating. Also, "In dial-up learning environments, learners may not be able to participate in courseware that requires a high bandwidth, to show video, for example," says Johnson. The fact is technology challenges are often underestimated or overlooked until an organization is in the midst of delivering the 15-minute training--and then, sometimes, it's too late to overcome the bad impression left on users.

When there are too many 15-minute sessions. If there's no time to prepare, focus on learning, absorb the information and reflect on it between training sessions, the learner becomes overwhelmed and actually ends up spending more time and energy than is necessary. Learning such as this is certainly not efficient or effective.

Furthermore, according to Harvard researchers, Cleave, he says "mastery goals and performance goals are two mutually exclusive mindsets. In the former, someone wants to learn something and is open to advice and suggestions. In the latter, people want to demonstrate what they know and are resistant to advice and suggestion because they do not want to appear incompetent."

Cleave further suggests that by delivering training in 15-minute chunks to someone on the job, you're asking them to discard job-related performance goals for mastery goals at the drop of a hat. "That's why, metaphorically speaking, the walk to the classroom is so valuable. Learners have time to change their state of mind to become receptive to information," he says.

Therefore with disadvantages prescript above, organizations would like to making sure that they do it right - Provided it is well designed, e-learning can be a valuable activity, particularly when interwoven with customer and product information systems. In designing, developing, and launching e-learning programs. Usually checklists to perform before the implementing stage are:

- What task should the learner be able to accomplish as a result of the training?
- Is e-learning the right method for this training task?

- What are the learners' specific needs, skills, and abilities?
- Is the training geared toward skill level and job responsibility?
- Is the information to be communicated in 15 minutes targeted to a specific learning objective?
- If the information depends on something learned earlier, does its design properly build on or reinforce the earlier learning?
- Is the technology supportive rather than frustrating?
- Does the training reference and integrate other needed information, such as knowledge management, performance support, or CRM data without asking the learner to complete a puzzle?
- Are a series of 15-minute lessons bridged or linked so that the learner will not be overwhelmed?
- Do we have the budget to start it up and maintain?

Finally, for any organization concerned with ROI, it pays to track learning, application and performance measures as part of the e-learning delivery system. This helps ensure that learners are accomplishing their objectives and that training is improving performance.

Achieving balance - As organizations continue to discover new ways to leverage e-learning, they will both suffer and learn from challenges. Eventually the right balance will be accomplished and well-designed e-learning programs will take their proper place among other training methods. Remember that just because a strategy is new doesn't mean it's better than older ones.

2.5 The IT and Technical Infrastructure considerations

Most technical based companies need to provide constant training or instruction to their workers, customers and suppliers. According to Ron Kurtus, in his published article title "When a company should consider using E-Learning, CBT or WBT" (2000). This is especially true for high-end technology-based organizations. Typically these companies provide needed training by sending their staffs to training institute, holding in-house training classes, or providing manuals and self-study guides. He claims that in some situations it is advantageous for them to use Computer-Based Training (CBT), Web-Based Training or other forms of e-learning instead of the traditional training. But before proceeding, questions we may have concerning is, "How do we deliver it to the best?"

In his similar article, he went on to further attest that practicing e-learning in modern industrial organizations provides cost effective, practical, standardization of learning and it can be better than reading the manual. On the other hand, in identifying disadvantages, the drawbacks are as follow:

Students must have access to computers, at home, at work, or at some training location in order to use CBT. Sometimes computer access isn't possible, even if accessing from home is possible, bandwidth limitation is the bottleneck.

Even if computer hardware are available, if the connection systems are not efficient, it may still cause disadvantages i.e. connection slow or often disconnected.

In the case of web based training (WBT), they also need to have access to the Internet. This can be a problem for training field personnel who may have computers but can't readily access the Internet for the just-in-time training or guidance.

To use e-learning, it is assumed that the personnel being trained are somewhat computer literate. They certainly must know how to use a keyboard and a mouse. Some people must be trained to get to the point of being able to use a CBT.

Some people have phobias concerning using computers, while others balk at any type of computer interaction. They may feel it is too impersonal or that the computer is out to get them. Some people may simply freeze up when confronted with learning on a computer.

In conclusion, before implementing e-learning into the organization, step has to be taken to establish firm IT infrastructure and support to fulfill minimum e-learning requirements.

2.6 Less Invigoration by the Government or the E-Learning Providers

One of the biggest factors that e-learning fails to initiate is the less invigoration by the state government and the e-learning provider. If implementation budget is not a barrier to an organization to start up e-learning, the next phase for that organization is to gather much more information to make a shift from traditional into hi-end training and learning methodology. Although there is always allocation of hundreds of thousands of dollars in the training and development department, e-learning is not always the first project chosen to

utilize such budget as they often failed a key element of success to be marketed and promoted. According to Will Hipwell (Promoting Your E-Learning Investment - abstract from Learning Circuits, ASTD Online Magazine), unless e-learning is mandatory, E-learning solution providers should use basic marketing techniques to attract and retain potential users is critical to ensuring e-learning's successful in implementing into any organization. For an example, introduce the new e-learning system to an organization (marketing), promote it and register initial users (internal marketing) and develop ways to maintain and increase usage over time (maintenance marketing). Simple marketing and promotion techniques can contribute substantially to the success of the e-learning initiative, especially in increasing and maintaining employee participation. Consider how the following techniques could be used in an organization to increase the use of e-learning.

Computer-based and Web-based training usually refer only to synchronous (when instructors and students are online at the same time, which requires less labor to develop and more to teach) and asynchronous training (when instructors and students are not online at the same time, which requires more resources to develop but next to none to teach). According to Will Hipwell, three of the most common objections to e-learning are: It does not work; it is impersonal; and it only works for dry, rote material. In fact, none of these is true, nearly all comparison studies show that e-learning is as effective as classroom instruction. From the above claimed, there are still few to none invigoration or support provided by the government or the e-learning providers to clear the doubts!

E-learning is impersonal if one, who responsible for the marketing portfolio, fails to provide an e-coach for learners -- someone whom learners can contact when they have questions, which checks up on learners as they go through courses, or even provide information before it is implemented in any organization. E-learning is also impersonal only if human resources and energy/communication/multimedia ministries fail to recognize and reward organizations for participation.

In summary, we should give e-learning a chance, to show what it can do. The government should take steps to explore and promote this system to the end users.

2.7 Learning Management System

Learning Management System (LMS) is a platform and the central component of an organization's training and development department that leverages learning and knowledge management to enhance business performance. LMS usually is a globally scalable application, providing mission-critical support in managing compliance and certifications. In many LMS that is available in the market, they usually provide unparalleled levels of support and records management for any blend of delivery environment: self-paced Web, live interactive Web, instructor-led courses, on the job training and documentation.

LMS posses a superb combination when works with e-learning environment. It provides advantages such as providing an easy automated, traceable and manageable compliance training and certification programs from a